

WEST RIM ENVIRONMENTAL IMPACT STATEMENT

LAWRENCE COUNTY, SOUTH DAKOTA

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Abstract: The Northern Hills Ranger District of the Black Hills National Forest has prepared a Final Environmental Impact Statement (FEIS) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. The Northern Hills Ranger District proposes to implement multiple resource management actions within the West Rim Project Area as guided by the Black Hills National Forest Land and Resource Management Plan (Forest Plan) as amended. The proposed action focuses on thinning pine stands through commercial and non-commercial harvest, generally followed by prescribed fire. Treatments in hardwood stands would emphasize prevention of the conversion of these sites from hardwood to pine. The design of the treatments is intended to move the respective Management Areas toward their Forest Plan structural stage objectives, where applicable. Three alternatives are considered in detail. Alternative A is the no action alternative; no management actions associated with this project would occur. Alternative B is the Proposed Action and includes silvicultural treatments on more than 17,000 acres designed to reduce fire hazard, reduce the risk of mountain pine beetle infestation and increase structural diversity across the Project Area. Alternative C includes all the activities in Alternative B, and adds fuel management buffers around all structures in the Project Area. Alternative B also includes additional fuel management activities in Spearfish Canyon including both private and NFS lands. Approximately 35 miles of new road construction and 126 miles of reconstruction would be required to implement the proposed treatments. This FEIS discloses the direct, indirect, and cumulative environmental impacts resulting from the proposed action and alternatives.

Summary

The Project Area is located in the northern Black Hills immediately south of Spearfish, South Dakota. The Project Area includes 43,028 acres of National Forest System (NFS) lands and 10,129 acres of non-NFS lands for a total of 53,157 acres. Included in this Project Area are landmarks such as Spearfish Creek, Spearfish Canyon, Spearfish Peak, Terry Peak, Iron Creek Lake, Iron Creek and Bridal Veil Falls. Ponderosa pine is the dominant forest vegetation, but areas of hardwoods and upland meadows are interspersed across the Project Area. On NFS lands, there is approximately 34,582 acres of ponderosa pine, 3,939 acres of white spruce, 3,102 acres of quaking aspen, 748 acres of grassland, 535 acres of bur oak, 83 acres of paper birch, and 30 acres of Douglas fir.

The purpose of and need for action in the West Rim Project Area is to reduce fire hazard and the risk of mountain pine beetle infestation and to increase structural diversity. Therefore, the proposed action focuses on thinning pine stands through commercial and non-commercial harvest, generally followed by prescribed fire. Treatments in hardwood stands would emphasize prevention of the conversion of these sites from hardwood to pine. The design of the treatments is intended to move the respective Management Areas toward their Forest Plan structural stage objectives, where applicable.

The Black Hills has changed substantially since the Custer Expedition's discovery of gold in the area in 1874. This discovery led to rapid Euro-American settlement, which brought with it mining, logging, road construction, grazing, non-native plant and animal species, human-caused fires, suppression of natural fires, and many other activities that have affected the forest. All of these actions have altered the natural disturbance regimes of this area.

Nearly a century of fire suppression has allowed fuels in this fire-adapted ecosystem to accumulate to dangerous levels, increasing the risk of a high-intensity wildfire threatening private property in or adjacent to the Project Area. With few exceptions, the Forest Plan calls for managing NFS land within the wildland urban interface (WUI) so that 50 to 75 percent of the area has a moderate-to-low fire hazard. For NFS land outside the WUI, the objective is to manage the land so that 50 percent of the area has a moderate-to-low fire hazard. Current conditions in the Project Area indicate that only 15 percent of the NFS land within the WUI and 24 percent of the acres outside of the WUI have a moderate-to-low fire hazard rating. A substantial gap exists between the existing and desired conditions for fire hazard in the Project Area.

The Forest Service received nine comment letters during scoping. Content analysis identified specific, separate statements within each letter and categorized them. This process identified 78 comments within the nine letters. These comments were then discussed and studied for significance to the process and for consideration

during alternative development. Based on the scoping comments, management direction, Forest Service specialist knowledge of the Project Area and internal discussions of the Forest Service ID team, two significant issues were identified that drove the development of the alternatives; fuel reduction in Spearfish Canyon and mountain pine beetle infestation near Cheyenne Crossing. The issue of the mountain pine beetle infestation near Cheyenne Crossing will be addressed under a separate future project.

The issues and purpose and need were used to develop three alternatives that were considered in detail. A brief description of each follows.

Alternative A (No Action) - No actions would occur as a result of this project. Activities approved under other National Environmental Protection Act (NEPA) decisions would still occur.

Alternative B (Proposed Action) - This alternative was developed by the interdisciplinary team (IDT) and released to the public for scoping. The proposed action is intended to meet the purpose and need of reducing fire hazard, reducing the risk of mountain pine beetle infestation and increasing structural diversity across the Project Area.

Commercial and non-commercial timber harvest would be utilized to modify stand structure and reduce stand density. Vegetative thinning reduces fire hazard and beetle risk while altering structural stage diversity. Harvest methods would include ground based and cable logging systems, depending on terrain. Prescribed fire would also be utilized to reduce the amount of available ground fuels and to mimic natural disturbances. The total area of treatment would be 17,363 acres within the Project Area. Approximately 35 miles of new road construction and 126 miles of reconstruction would be required to implement the proposed treatments.

Alternative C - This alternative was developed in response to scoping comments that raised the significant issue of further reducing fire hazard in Spearfish Canyon. Alternative C includes all the activities under Alternative B and adds fuel management buffers around all structures in the Project Area. The fuel management buffers would extend 300 feet from all structures in the Project Area and some additional areas in Spearfish Canyon including both private and NFS lands. The total area of NFS lands within the 300-foot buffers is 928 acres, which increases the total treatment area to 18,291 acres. An additional 760 acres of private lands are within the 300 foot buffers that would potentially be treated, but any treatment on private land is the responsibility of the landowner and will not be conducted by the Forest Service.

A comparison of the alternatives by how they address the key issues, respond to the purpose and need, and the environmental effects on selected components is provided for the public and decision maker. The alternatives are compared in Table I by specific measurement indicators developed for each issue and purpose and need elements and in Table II by effects on selected environmental component. A complete analysis of the effects of the alternatives by resource topic is provided in Chapter 3.

Table I. Comparison of Alternatives by Issues and Purpose and Need Elements

	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C	Forest Plan Objectives
Issue and Purpose and Need Element – Fuel Reduction in Spearfish Canyon				
Indicator – Fire hazard in WUI				
High to Very High Fire Hazard Category	85%	65%	65%	25 to 50%
Low to Moderate Fire Hazard Category	15%	35%	35%	50 to 70%
Indicator – Level of Vegetation Management (acres treated)	0	17,363	18,291	NA
Indicator – Prescribed Burning (acres)	0	13,226	14,154	NA
Purpose and Need Element - Risk of Mountain Pine Beetle Infestation				
Indicator – Mountain Pine Beetle Risk Rating				
Percentage in High Mountain Pine Beetle Risk	65%	35%	35%	
Percentage in Moderate Mountain Pine Beetle Risk	16%	42%	42%	
Percentage in Low Mountain Pine Beetle Risk	19%	23%	23%	
Purpose and Need Element - Increase in Structural Diversity in Ponderosa Pine Stands				
Indicator – Movement in Structural Stages toward Forest Plan Objectives				
Percentage in Grass-forb	1%	1%	1%	5%
Percentage in Shrub-seedling	3%	3%	3%	5%
Percentage in Sapling-pole; <40% crown cover	2%	5%	5%	10%
Percentage in Sapling-pole; 40-70% crown cover	0%	11%	11%	15%
Percentage in Sapling-pole; >70% crown cover	2%	1%	1%	5%
Percentage in Mature; <40% crown cover	16%	47%	47%	25%
Percentage in Mature; 40-70% crown cover	55%	23%	23%	25%
Percentage in Mature; >70% crown cover	19%	7%	7%	5%
Late Successional	2%	2%	2%	5%

Table II. Comparison of Alternatives on Environmental Effects to Selected Resourcesⁱ

	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C
Effects on Cooper's Mountain Snail	No change	May adversely impact individuals but is not likely to result in the loss of viability in the Project Area, nor cause a trend towards federal listing or a loss of species viability.	May adversely impact individuals but is not likely to result in the loss of viability in the Project Area, nor cause a trend towards federal listing or a loss of species viability. This alternative would have additional impacts to snails compared to Alternative B.
Effects on American Dipper	No change	Dippers are not likely to be impacted by the proposed fuels treatments in Spearfish Canyon under Alternative B	Short-term impacts from additional fuels treatments in Spearfish Canyon would have additional impacts compared to Alternative B.
Effects on Road density (mi/sq mi)			
Lower Spearfish Creek	3.0	3.2	3.2
Cleopatra Creek	2.8	3.2	3.2
Iron Creek	3.8	4.3	4.3
Annie Creek	3.4	3.8	3.8
Middle Spearfish Creek	3.4	3.6	3.6
Dead Ox Creek	3.9	4.6	4.6
Upper Spearfish Creek	4.0	4.4	4.4
New roads constructed ⁱ	0.0	35.0	35.0
Timber Volume (Million bd ft)	0	59	59

ⁱ increased road density in the Condition Class III watersheds (Lower Spearfish Creek, Cleopatra Creek and Iron Creek) is a concern with regard to the Forest's direction for Condition Class III watersheds.

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